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Game Development to Introduce Indonesian Traditional Weapons using MDA Framework

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Abstract

It is unfortunate that more and more youths are less concerned and are not interested in acquainting and studying Indonesian traditional culture, especially concerning on traditional Indonesian weapons. This fact is noticed from data as collected from several bookstores including online bookstores which the number of books on traditional weapons originating from abroad as published in Indonesia has a significant comparison compared to books on traditional weapons from Indonesia, in a stagerring 1:7 comparisson. Therefore, it is necessary to develop a media that can generate interest in couriosly learning about Indonesian culture, especially when introducing traditional Indonesian weapons. This research was conducted to develop a media in the form of android games that can be applied for the introduction of Indonesian culture, especially traditional weapons. The employed method of game development is the MDA Framework. Evaluation was carried out by using the Playtesting Evaluation and Gameflow methods. The evaluation results related to the concentration of players during game playing presents that the game has given a lot of encouragement to players to play games in several aspects of: game graphics, game sound, game stories, gameplay, simple interfaces, and completion of missions and main objectives regarding traditional Indonesian weapons, trigerring the player interest in playing this game and to maintain their focus throughout the game. In overal, the evaluation results using playtesting evaluation and Gameflow test depicts that a rating above average with an overall rating of 3.61 (72.18%) and the game Mystical Weapon of Nusantara can be accommodated as a medium for the introduction of traditional Indonesian weapons as indicated by the probability of a t-test of 1,169x10-19 which is far below the value of α = 0.05. Thus, it is concluded that there is an improvement in user knowledge, as well as the value of respondent answer showing above the average, which is 3.83 (76.67%).

Keywords: *Action Adventure Platformer, MDA Framework, Playtesting Evaluation, Gameflow Test, and Traditional Indonesian Weapons*

1. Introduction

Technology which has developed very rapidly is responsible to erode the cultural values of Indonesia as interfered by foreign cultures; causing all levels of society indirectly to neglect traditional culture due to following the flow of globalization. For this time being, more and more youths are unfortunately less concerned and are not interested in knowing and studying Indonesian traditional culture, especially traditional Indonesian weapons. Data collected from several bookstores such as Gramedia and Togamas bookstores including online bookstores such as Garisbuku.com and bukabuku.com shows that the number of books on traditional weapons originating from overseas publication in Indonesia has a significant comparison compared to books about traditional weapons from Indonesia, which is 1:7. There are several books having the theme of traditional Indonesian weapons, while more books content the information about weapons from abroad. In addition, according to statistical data from UNESCO in 2016, from a total of 61 countries, Indonesia is ranked 60th with a low literacy rate [1] [2] [3]. This condition indirectly causes the Indonesian people to have limited knowledge of the weapons of their own ancestors, due to the low interest in reading [4], [5].

As a goal to retract the interest of the Indonesian people, especially students to gain insight on traditional Indonesian weapons, smartphone technology can now be employed as the properly right media to channel the message in an interactive way. Smartphone also is belived to provide games or mobile games as one of the effective tools for learning support medium to many users [6] in unlimited time and place. Some studies also developed games as learning media such as

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Edisame History of Walisongo which was created to introduce the history of Walisongo through games [7] [8], Educational Body Games and Identification of Numbers for children with special needs (intelectual disability) by using Kinect [9], and Educational Games as Learning Media for Early Childhood Education [10]. Therefore, this research is conducted by developing an Action-Adventure Platform game [11] on the Android platform, aiming as a learning tool in introducing Indonesian culture, especially traditional Indonesian weapons. The Action-Adventure Platforme game genre was chosen based on data as released by the Entertainment Software Association (ESA) in 2017 and 2018 with genre of Action, Role Playing, and Adventure in consecutive ranks of 2, 4 and top 5 with the best sales in America [12], [13]. The game developed in this research is named as Mystical Weapons of Nusantara which is intended for the age group of 13 years or more based on age categories in Indonesia Game Rating System (IGRS).

2. Research Method

Framework is applied as a general/specific design of a problem domain section that aims to be reused by application developers [14]. The framework provides points known as hotspots or extension points that can be employed by application developers in customizing the system [15]. Whereas, the MDA Framework provides as a formal approach to game understanding bridging among game development and design, game criticism, and technical game research [16]. The MDA Framework also provides a tool to analyze games. The MDA Framework has several components, consisting of: Rules, Systems, and "Fun" which are then referred to as mechanics, dynamics, and aesthetics [16]. Therefore, the Mystical Weapons of Nusantara Game was developed by using the MDA Framework method. Figure 1 portrays an adjustment to mechanics from a game helping to improve the overall dynamics of the game, while dynamics work is applied to create aesthetic experiences. An example is provided such as: challenges which are made in the form of time pressure and fighting enemies.

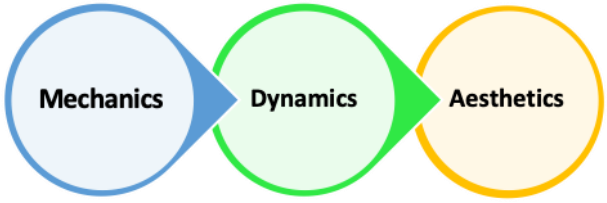


Figure 1. MDA Framewrok Component

2.1 Mechanics

Mechanics are considered as various actions, behaviors, and mechanisms of control which are given to players in the context of the game [16]. Mechanics describes specific game components, at the level of data representation and algorithm. At the level of program mechanics, a specific data structure or algorithm is presented. Mechanics can also be described as a component which is able to move players to take action and support the overall dynamics of the game when combined with game content such as levels, assets, and so on. Mechanics when planned carefully will produce a positive response from players [17]. Several examples of mechanics from card games are: card randomization, card picking tricks, and card betting which bring dynamics such as snapping.

There are 4 Mechanics as made in the Mystical Weapons of Nusantara game, such as: points, levels, badges, and challenges/quests [16] [18]. Points are earned by players by collecting coins as obtained by players at each stage. Coins are used to record the behavior of players in gaining a score. Each stage has 100 coins that can be used as a measure of player perfection in completing each stage. Players obtain 1 star if they get less than 50 coins, 2 stars if the player acquires more than 50 coins and less than 75 coins, and 3 stars if the player gets more than 75 coins. Levels are a means to show the progress of a player. Levels are shown in the form of an Indonesian map progress icon (Figure 2), in which the players are directed to explore the provinces in Indonesia. East Java Province is selected as the beginning of the adventure. Players can explore all provinces in Indonesia by firstly defeating NPC bosses in every province having diverse strengths and behaviors. Badges are made to reward players after fighting NPC boss at each level and are designed in the form of traditional weapons that can be found in each explored

province. Traditional weapons obtained in each province can be collected and used during the battle at the next level by selecting the collection menu (Figure 3).

By running this game, it is expected that the players can always see traditional Indonesian weapons that they have collected as well as understand their characteristics.

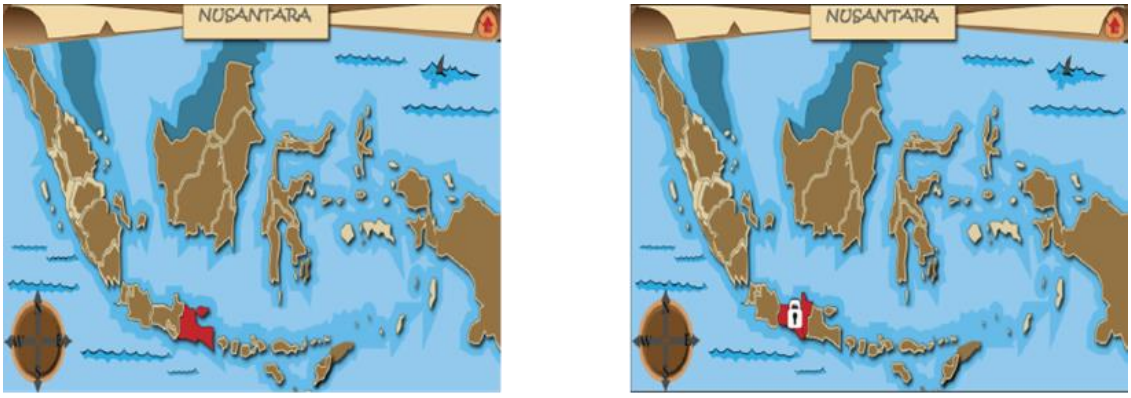


Figure 2. Icon Map Progress on Indonesia Map

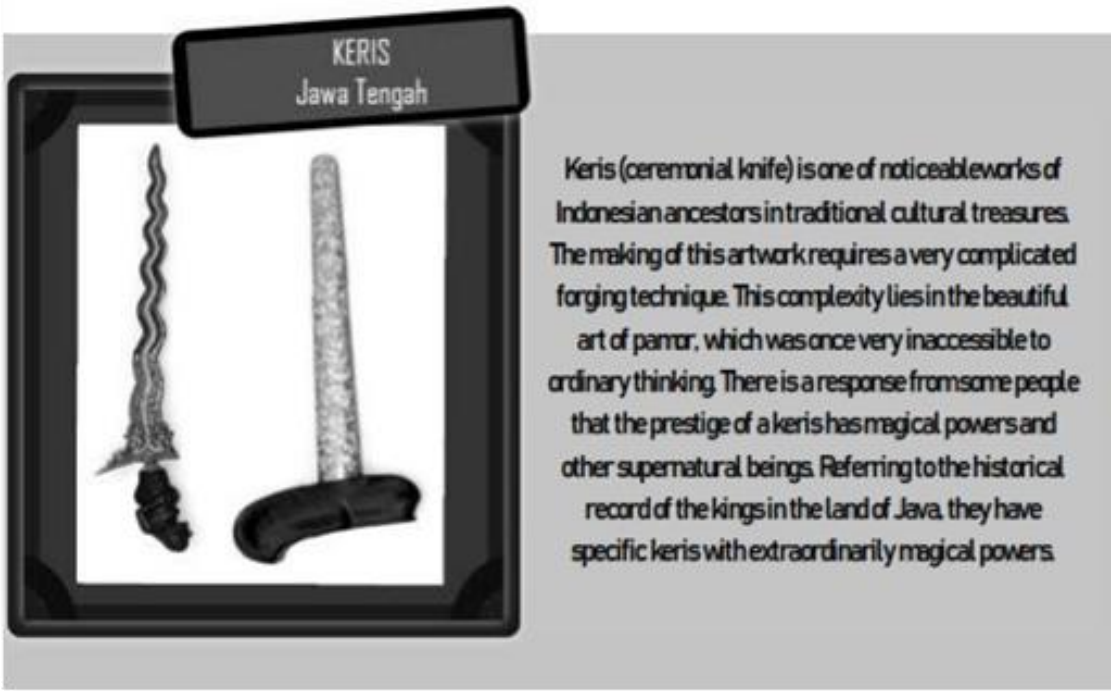


Figure 3. Collection Sample of Traditional Weapon

Challenges/quests are made to provide challenges and instructions to the player what to do to proceed to the next level. The challenges in this game are made as diverse as NPC monsters, traps, varied stages, and NPC boss who will always increase their difficulties along with the increasing level of the player. The aim of increasing the challenges at each level is so that players do not feel bored and are always interested in playing the game.

2.2 Dynamics

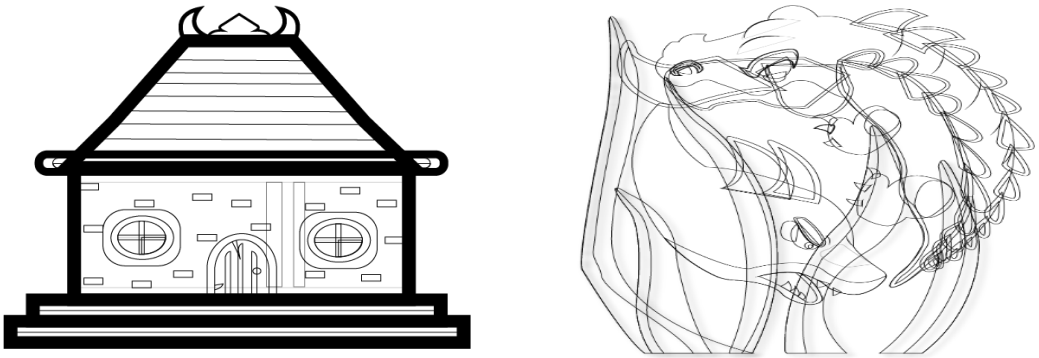
Dynamics is identified as a player interaction with mechanics itself [16]. Dynamics determines things to occur with the player when mechanics works. Dynamics works to create aesthetic experiences. Thus, after mechanics in a game has been created, it will produce a system in the game. There are 3 (three) dynamics that are designed in this game, such as: constraints, choices, and consequences. Constraint is made for the player to continue to the next level before the player completes the Quest at the previous level or the 1st stage. Choices are designed to make the game be more dynamic. Several instances are when the players can

choose to attack, avoid, and then to re-attack by using ordinary attacks or special attacks directly in the face of each enemy as encountered at each stage. Consequences are choices that have been chosen by the players, resulting in direct consequences for the player. Players can defeat each enemy at each level efficiently and if they make the right decision, players can pass each challenge easily. The creation of a content or rule in a game is a phase that does not involve programming, art, animation or marketing, or one of the other tasks as commonly needed in creating a game. All of these tasks can be collectively called as game development and game design as part of creating a game [19] [20].

2.3 Aesthetics

Aesthetics configures the desired emotional response caused by the player, when inyteracting with the game system [16]. There are eight types of aesthetics as stated by Hunicke, LeBlanc and Zubek, which are: Sensation (Game as sense-pleasure), Fantasy (Game as make-believe), Narrative (Game as drama), Challenge (Game as obstacle course), Fellowship (Game as social framework), Discovery (Game as uncharted territory), Expression (Game as self-discovery), and Submission (Game as pastime). An example is provided in several games such as: Charades, Quake, The Sims, and Final Fantasy having its own "Fun" feature and Aesthetics in various levels. The aesthetic components that create player experience in the Charades game are: Fellowship, Expression, and Challenge. Whereas, for Final Fantasy game, Aesthetics components include: Fantasy, Narrative, Expression, Discovery, Challenge and Submission. The Mystical weapon of nusantara game is designed to have 4 (four) Aesthetics such as: challenge, sensation, fantasy, and narrative.

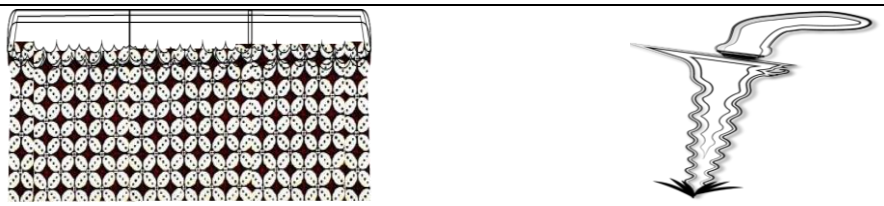
Sensation can also be used to generate emotions from players through manipulating visuals/images, audio/sound and touch. There are several figures and background figures made from the characteristics of each province, such as traditional houses and traditional weapons to evoke sensations and emotions from players, in interactively experiencing the province they are playing. The example is provided for stage 1, where East Java province uses figures such as the symbol of Surabaya city, shortened from Sura fish and Crocodile alongwith the provided traditional houses. For the province of Java, Figures are incorporated such as kawung batik motif for ground and Keris weapon as presented in Figure 4 and Figure 5. The background music used is traditional music from each province such as instrumental sound of Cublak-Cublak Suweng for East Java stage and instrumental sound of Lir ilir for Central Java stage. There are several touches that become interactions between players and games, which are: control of characters in the game, menu control options, and sound control settings.



(a) (b)

Figure 4. (a) East Java Traditional House, (b) Sura Fish and Buaya (Crocodile) Shortened as (Surabaya) Statue

Fantasy is actualized by designing and creating characters as played by a player named Sentra. Sentra is portrayed as a young man living in the 30th century, as the only young man of the 30th century who still knows and believes in the past history, as it is hardly any people in the 30th century holding onto belif in the wealth of historical heritage, due to technology and modern life taking over the minds of all humanity on earth, as history is only considered a fairy tale for young children. The design of the Sentra character is demonstrated in Figure 6.



(a) (b)

Figure 5. (a) Ground/Tile of Kawung Batik Motif, (b) Keris Weapon

Figure 6. Sentra Character

Narrative is actualized by making Storyline games matched with stories in 30th century aliens having a 3-time size of normal human arriving on Earth. Flocks of aliens equipped with their strength far exceed the military technology at that time. The aliens show an unfriendly attitude of peace towards humans on Earth, as made clear by the attacks addressed to humanity, taking of all-natural resources on Earth. News of this alien invasion soon spreads to all corners of the earth, as are human beings who initially lived peacefully; they have to raise arms to expel all aliens from this earth and to exert every effort for seizing peace. Every now and then, all countries on earth unite to drive away the aliens. After nearly 10 years of fight and battle with aliens, humans fail to drive the aliens away from this earth, because modern weapons at that time have lost their strength and could not be used due to alien forces in reducing and crippling all kinds of human-made modern weapons.

The earth is finally on the verge of collapse, as war with aliens has long damaged this earth, wher the land becomes arid, water sources and food supplies are increasingly scarce, even worse that the human population drops rapidly. Then the world peace organization find the only way to defeat the aiens and to drive them away, by using Mystical Weapons originating from the State of Indonesia (Nusantara) in the 15th century. The power of these mystical weapons is lethal, as they hold purely unseen spirit power, to pour rain, to invite storms, tornadoes, lightning, and to even summon demitic forces / strong spirits from the past. Human cooperation is later paid off; they finally succeede in creating a time machine to send one human to the 15th century. After carrying out the entire process of electing humans to be sent to the 15th century, a strong candidate for this task goes to a 20-year-old young man from an Indonesian country called "Sentra".

Sentra is the only young man of that era who still knows and believes in history, as it is hardly in the 30th for any people to hold belief onto the wealth of historical heritage. The century technology and modern life are blamed to dominate the minds of all humanity on earth, making history to be considered as a fairy tale for young children. By employing a time machine, Sentra is finally sent to the 15th Century, but unexpectedly the alien king has managed to steal information about the plans of mankind, immediately following to the past to prevent Sentra. With his power, the alien king prepares the deadly traps to prevent Sentra, and hypnotizes animals at that time to attack. This hinders Sentra adventures to the past to smoothly run. The adventure of "Sentra" in

getting Nusantara weapons as final effort to defeat the aliens becomes a story made for the Mystical Weapon of Nusantara game.

Players will experience adventure in each Indonesia province in search of traditional weapons which are the typical weapons of the province. Players play this game by exploring a stage having the themes such as provinces chosen by players, by which the players are free to explore with a mission to get traditional weapons as provided in the stage and by which the players will face several obstacles and traps to overcome in order to complete its mission.

Challenge is actualized by adding obstacles or challenges in the form of NPC monster and boss with different designs in each stage. These challenges or obstacles are made for the players to feel a satisfaction when they can overcome the obstacles they face, so as to avoid boredom in playing the game. The design of NPC monsters and bosses is illustrated in Figure 7 and Figure 8.

Figure 7. NPC Monster for East and Central Java Stage

Figure 8. NPC Boss for East and Central Java Stage

3. Result and Discussion

Game evaluation is performed by using the Playtesting Evaluation [21] and Gameflow Test [22] methods. Game evaluation is conducted to extract information whether the Mystical Weapon of Nusantara game could be used as a medium for the introduction of traditional Indonesian weapons and if it is fun to be played. In addition, game evaluation is intended to get feedback about games from respondents. The evaluation is carried out by introducing the game that had been made to the respondent and later asks the respondent to play the game for 10-15 minutes without explaining the way to play the game. Afterwards, questions about their experiences after playing the game are given in the form of questionnaires [22]. A total of 30 respondents are involved in the age range of 13-17 years. The test results as conducted through playtesting and gameflow, present various values for each element (with a range of values from 3-4.68 out of the seven elements tested, including: Concentration, Challenge, Player Skills, Control, Clear Goals, Feedback, and Immersion (Figure 9)). The test results are presented in Table 1.

This research also tests the success of the application by asking players to answer questions about the names of traditional Indonesian weapons before and after playing the game of "Mystical Weapon of Nusantara". A total of 30 respondents are involved in this test. The results of the answers are then calculated from the number of correct answers before and after playing the game, then t-test is done based on the results of the answers. The results of the t-test show that the probability value of 1.169x10-19 is far below the value of $\alpha = 0.05$, which means there is an increase in user knowledge of the application as shown in Table 2. This result is in line with the results of the questionnaire on the game of "Mystical Weapon of Nusantara" which can be used as a medium for the introduction of traditional Indonesian weapons as depicted in Table 3.

Table 1. Game Flow Testing Results

Element	Criteria	0	1	2	3	4	5	Total
Concentration								
Games should provide a lot of stimulus from different sources		0	0	0	1	4	21	4.13
Games must provide stimulus that is worth attending to		0	0	0	3	7	20	4.57
Games should quickly grab the player attention and should maintain their focus throughout the game		0	0	0	3	9	18	4.50
The player shouldn't be burdened with tasks that are unimportant		0	0	0	2	4	24	4.73
Players should not be distracted from tasks that they want / need to concentrate on		0	0	0	2	2	26	4.80
								4.55
Challenge	Criteria							
Challenges in games must match the player skill level		0	0	0	13	10	7	3.80
Games should provide different level of challenge for different players		23	2	1	2	1	1	0.63
Level of challenge should increase as the players progresses through the game and their skill level		0	0	0	19	6	5	3.53
Games should provide new challenges at an appropriate pace		0	0	0	6	7	17	4.37
								3.08
Player Skills	Criteria							
Players should be able to start playing the game without reading the manual		0	0	0	3	2	25	4.73
Learning the game should not be boring, it should be part of the fun		0	0	0	2	2	26	4.80
Games should provide online help so the player doesn't need to exit the game		22	2	2	2	1	1	0.70
Players should be taught to play the game through tutorials or initial levels that feel like playing the game		0	0	0	3	7	20	4.57
Games should increase player skills at an appropriate pace as they progress through the game		0	0	0	4	8	18	4.47
Players should be rewarded appropriately for their effort and skill development		0	0	0	2	4	24	4.73
Game interfaces and mechanics should be easy to learn and use		0	0	0	2	3	25	4.77
								4.11
Control	Criteria							
Players should feel a sense of control over their character or units and their movements and interactions in the game world		0	0	0	3	8	19	4.53
Players should feel a sense of control over the game interface and input devices		0	0	0	3	7	20	4.57
Players should feel a sense of control over the game shell (starting, stopping, saving etc)		0	0	0	3	7	20	4.57
Players should not be able to make errors that are detrimental to the game and should be supported in recovering from errors		0	0	0	3	3	24	4.70
Players should feel a sense of control and impact onto the game world (like their actions matter and they are shaping the game world)		0	0	0	2	6	22	4.67
Players should feel a sense of control over the actions that they take and the strategies that they use and that they are free to play the game the way that they want (not simply discovering actions and strategies planned by the game developers)		0	0	0	5	7	18	4.43
								4.58
Clear Goals	Criteria							
Overriding goals should be clear and be presented early		0	0	0	3	2	25	4.73
Intermediate goals should be clear and be presented at appropriate times		0	0	0	7	13	7	3.60
								4.17
Feedback	Criteria							
Players should receive feedback on their progress to their goals		0	0	0	4	5	21	4.57
Players should receive immediate feedback on their actions		0	0	0	2	6	22	4.67
Players should always know their status or score		0	0	0	2	2	26	4.80
								4.68
Immersion	Criteria							
Players should become less aware of their surroundings		0	0	0	18	8	4	3.53
Players should become less self-aware and less worried about everyday life		0	0	0	17	10	3	3.53
Players should feel emotionally involved in the game		0	0	0	7	17	6	3.97
Players should feel viscerally involved in the game		0	0	0	13	10	7	3.80
								3.71
	Overall							3.61

0 – N/A, 1 – not at all, 2 – below average, 3 – average, 4 – above average, 5 – well done

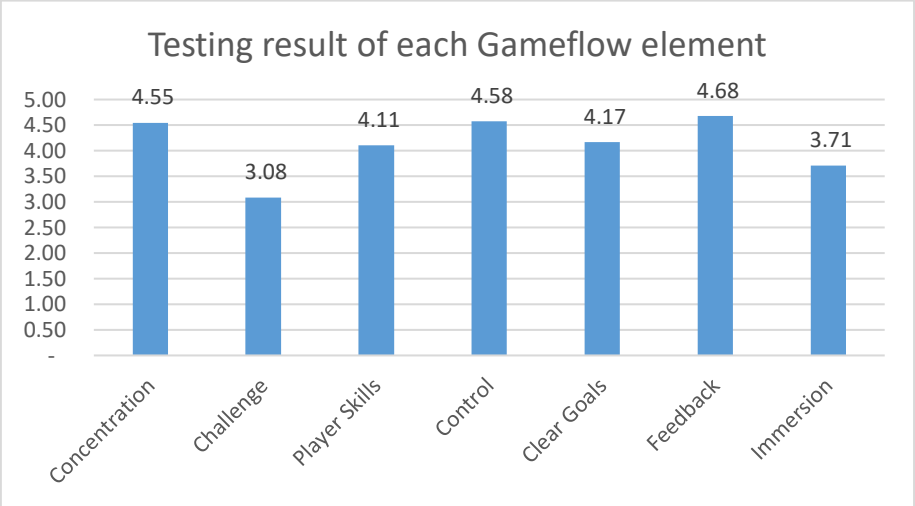


Figure 9. Graph of Testing Results of Each Gameflow Element

Table 2. Test Results on the User Knowledge Before and After Playing the Game of "Mystical Weapon of Nusantara"

	Total correct answer	
	Before	After
Average/mean	0.903225806	4.258064516
Deviation Standard	0.746317122	0.773207257

Table 3. Feasibilityof Evaluation Result for the Mystical Weapon of Nusantara Game as a Medium for Traditional Weapon Recognition

Criteria	1	2	3	4	5	Total
Can "Mystical Weapon of Nusantara" game be applied as a medium for the introduction of traditional Indonesia weapons	0	1	11	10	8	3.83

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

4. Conclusion

MDA Framework method can properly be implemented for the development of Mystical Weapon of Nusantara game. In overall, the evaluation results using playtesting and Gameflow test presents a rating above average with an overall rating of 3.61 (72.18%) with 7 (seven) elements tested including: Concentration, Challenge, Player Skills, Control, Clear Goals, Feedback, and Immersion. The lowest value is in the Challenge element that is closely related to the level of difficulty for different players. Whereas, the highest score is in the Feedback element which includes information to the player regarding: mission completion or failure, keeping records of missions, goals and status, providing scores and summaries at the end of the mission, as well as visual and auditory feedback from actions, tasks, and events. In addition, the most important thing to note from the results of the game evaluation is the fact of Mystical Weapon of Nusantara game can be used as a medium for the introduction of traditional Indonesian weapons as indicated by the probability value of the t-test of 1.169x10-19 which is below the value of α = 0.05. Finally, it was concluded that there is an increase in user knowledge of application, as well as the results of answers from respondents showing above the average of 3.83 (76.67%).

References

[1] Mikhael Gewati, *"Indonesia's Reading Interest is in the 60th Rank of the World," Kompas.com*, 2016. [Online]. Available: https://edukasi.kompas.com/read/2016/08/29/07175131/minat.baca.indonesia.ada.di.urutan.ke-60.dunia. [Accessed: 02-Nov-2018].

[2] N. Iswari, *"Why Literacy in Indonesia Is Very Low," CNN Indonesia*, 2017. [Online]. Available: https://student.cnnindonesia.com/edukasi/20170910122629-445-240706/mengapa-literasi-di-indonesia-sangat-terendah/. [Accessed: 02-Nov-2018].

[3] Yudha Manggala P Putra, *"Reading Interest in Indonesia Is Still Low," Republika.co.id*, 2018. [Online]. Available: https://republika.co.id/berita/pendidikan/eduaction/18/02/20/p4gflk284-minat-baca-di-indonesia-disebut-masih-rendah. [Accessed: 02-Nov-2018].
[4] P. S. Pratiwi, *"Indonesian People Interest in Reading Is Still Low," CNN Indonesia*, 2018. [Online]. Available: https://www.cnnindonesia.com/gaya-hidup/20180326160959-282-285982/minat-baca-masyarakat-indonesia-masih-rendah. [Accessed: 02-Nov-2018].
[5] Moh Nadlir, *"Per Day, the Average Indonesian Only Reads a Book for Less Than an Hour," Kompas.com*, 2018. [Online]. Available: https://nasional.kompas.com/read/2018/03/26/14432641/per-hari-rata-rata-orang-indonesia-hanya-baca-buku-kurang-dari-sejam. [Accessed: 02-Nov-2018].
[6] L. Johnson, R. Smith, A. Levine, and K. Haywood, *"The 2010 horizon report: Australia-New Zealand Edition,"* 2010.
[7] N. I. Widiastuti and I. Setiawan, "*Building a Walisongo Historical Educational Game*," Jurnal Ilmiah Komputer and Informika, Vol. 1, No. 2, Pp. 41–48, 2012.
[8] M. A. Yoannita, *"Design of a History Application for Walisongo (Sunan Kalijaga) with Unity 3D,"* Palembang, No. X, Pp. 1–10, 2014.
[9] F. Y. Al Irsyadi and Y. S. Nugroho, *"Educational Game for Limbs Recognition and Number Recognition for Children with Special Needs (Kinships) based on Kinect,"* Prosiding SNATIF, Vol. 2, Pp. 1–8, 2015.
[10] A. V. Vitianingsih, "*Educational Games as Learning Media for Early Childhood Education*," Inform, Vol. 1, No. 1, Pp. 1–8, 2016.
[11] T. H. Apperley, "Genre and Game Studies: Toward a Critical Approach to Video Game Genres," *Simul. Gaming*, vol. 37, no. 1, pp. 6–23, 2006.
[12] *"2018 Essential Facts About The Computer and Video Game Industry,"* Entertainment Software Association, Long. Beach. Calif, 2018.
[13] *"2017 Essential Facts About The Computer and Video Game Industry,"* Entertainment Software Association, Long. Beach. Calif, 2017.
[14] M. Fayad and D. C. Schmidt, *"Object-Oriented Application Frameworks," Communications of the ACM*, Vol. 40, No. 10, Pp. 32–38, 1997.
[15] D. Riehle, *"Framwork Design - A Role Modeling Approach,"* Swiss Federal Institute of Technology Zurich, 2000.
[16] R. Hunicke, M. LeBlanc, and R. Zubek, *"MDA: A Formal Approach to Game Design and Game Research,"* Work. Challenges Game AI, Pp. 1–4, 2004.
[17] G. Zichermann and C. Cunningham, *"Gamification By Design,"* 2011.
[18] O. Beza, *"Gamification: How Games Can Level up Our Everyday Life,"* Univesity Amsterdam, Holand, No. June, Pp. 1–21, 2011.
[19] S. Rogers, *"Level Up!: The Guide to Great Video Game Design*," First Edit. The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, United Kingdom: John Wiley & Sons, Ltd Registered, 2010.
[20] E. Adams, *"Fundamentals of Game Design*," Third Edit. United States of America: New Riders, 2014.
[21] T. Fullerton, *"Game Design Workshop: A Playcentric Approach to Creating Innovative Games*," Second Edi. Morgan Kaufmann, 2008.
[22] P. Sweetser and P. Wyeth, *"GameFlow: A Model for Evaluating Player Enjoyment in Games,"* Computer in Entertainment, Vol. 3, No. 3, Pp. 3–3, 2005.